

# CORRELATES OF FIRST-TIME MOTHERS' POSTPARTUM STRESS

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The purpose of this study was to examine first-time mothers' postpartum stress and its correlates following discharge from the hospital or clinic after vaginal delivery. One hundred and eighty-three first-time mothers were enrolled from hospitals and clinics in Kaohsiung City. All first-time mothers reported normal pregnancies and vaginal deliveries, delivered healthy infants at term, and were surveyed during their postpartum periods after discharge from hospitals or clinics. The Hung Postpartum Stress Scale was used to examine first-time mothers' postpartum stress and stressors during their postpartum periods. The top ten postpartum stressors perceived by the women were: "the baby getting sick suddenly", "the flabby flesh of my belly", "the unpredictability of the baby's schedule", "interrupted sleep", "the shape of the baby's head due to the sleeping position", "not sleeping enough", "lack of information regarding infant's growth and development", "the baby's crying", "my life is restricted", and "the baby choking during feeding". There were no significant differences between the first-time mothers' demographic characteristics and their postpartum stress and its three components (negative body changes, maternal role attainment, lack of social support), respectively. Insight into the study results of first-time mothers' postpartum stress and stressors provides a reference for health professionals that the development of programs and resources addressing primiparous women's unique needs are required.

**Key Words:** first-time mothers, lack of social support, maternal role attainment, negative body changes, postpartum stress  
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The postpartum period is characterized by dramatic changes and requires adjustments, and makes women more vulnerable to the effects of postpartum stress on their health [1]. Hung's study [2] demonstrated that concerns about negative body changes, maternal role attainment, and lack of social support are three components of postpartum stress. Immediately after giving birth, women experience pain and a feeling of tiredness as a result of the tremendous physiologic changes they experienced during the process. Researchers have found that women's concerns over body changes

during the early postpartum period were related primarily to perineal sutures, breast care, body image, and fatigue [3]. Discomfort from episiotomy may inhibit sexual relations and effective elimination of waste. Breast engorgement is also a source of discomfort and women may experience nipple soreness or the annoyance of leaking milk. A woman may be afraid to explore her body because of body changes after childbirth. In addition, infant care involves round-the-clock attention, and prevents adequate maternal rest [4].

Mothering capability involves the mother's sensitivity to the infant's behavioral cues and the mother's ability to respond appropriately [5,6]. In the postpartum period, a woman needs to learn about and understand her infant's unique patterns of crying, sleeping, feeding, and other behaviors. If a woman is unable to soothe the infant's crying or is awkward in giving care,

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she may consider herself a failure [4]. Challenges to a mother's self-confidence may trigger postpartum stress [7]. A woman's family and friends can be a major source of feedback on how she is fulfilling the role of a mother. The validation she receives from these individuals influences her role expectations. Reece found that social support from spouse and family was associated with positive self-evaluations in terms of both parenting and lowered stress [8]. Thus, a lack of social support may influence a woman's ability to see herself as competent and capable of carrying out her roles and responsibilities and, consequently, raise the level of postpartum stress. Kivijarvi et al found that mothers' perceptions of social support were significant predictors of maternal attitudes and the quality of interaction with their infants [9].

Research suggests that a reduced hospital stay following delivery does not result in an increased incidence of health problems that require hospitalization [10–12]. Although physiologic outcomes following discharge are important, they may not show the entire complement of complications experienced by new mothers. Psychosocial issues occurring in the early weeks following delivery should not be dismissed as insignificant. Large-scale assessment of other adverse effects is warranted, and early identification of priorities would aid nurses in providing cost-effective preventive health measures. Therefore, the purpose of this study was to examine first-time mothers' postpartum stress and its correlates following discharge from the hospital or clinic after vaginal delivery.

## METHODS

### *Sample*

This was a secondary analysis of a larger study that tested 877 postpartum women's health status and its predictors. A sample of 183 first-time mothers was enrolled from hospitals and clinics in Kaohsiung City. All women reported normal pregnancies and vaginal deliveries, delivered healthy and single infants at term, and were surveyed over 6 weeks postpartum using the Hung Postpartum Stress Scale (Hung PSS).

### *Instrument*

The 61-item Hung PSS is a valid and reliable tool for assessing women's postpartum stress during the 42-day

puerperium. The exploratory factor analysis indicated that concerns about maternal role attainment, negative body changes, and lack of social support are three components of postpartum stress. In addition, the generalizability of the Hung PSS was shown with high coefficients of congruence among postpartum women across the type of delivery, level of education, and income status. The internal consistency reliabilities for its three dimensions across the full sample and within pertinent subsamples also showed that the Hung PSS is a reliable tool for measuring postpartum stress, with  $\alpha$  coefficients ranging from 0.84 to 0.92 [2].

On a five-point Likert scale rating from 1 (not at all) to 5 (always), women rated each item according to how much stress was perceived during the postpartum period. The score for postpartum stress was derived by summing all ratings, resulting in potential scores between 61 and 305. Higher values indicated higher stress. Cronbach's  $\alpha$  of the Hung PSS in this study was 0.95.

### *Procedure*

After approval from the institutional review board of each participating institution, potential participants were visited by a research assistant during postpartum hospitalization. The study and consent forms were explained to each participant using standardized scripts. Once a signed consent form was obtained, a demographic questionnaire was completed by each woman. A telephone interview was scheduled for each woman after discharge from the hospital and clinic. All telephone interviews took place in the participant's residence within the first 6 weeks postpartum. During the telephone interviews, the women completed the Hung PSS.

## RESULTS

### *Characteristics of first-time mothers*

A sample of 183 first-time mothers in their postpartum period was enrolled from Kaohsiung City. Their mean age was  $27.56 \pm 4.05$  years, and most of the women had obtained a senior high school diploma or below; 58.5% of the women were employed full-time. Most had a total monthly household income of NT\$50,000 or above. The mean length of marriage was  $17.83 \pm 18.60$  months; 70.5% of women said that this pregnancy was unplanned. Most of the women (73.8%)

**Table 1.** Characteristics of first-time mothers ( $n = 183$ )

	Mean $\pm$ SD	$n$ (%)
Age (yr)	27.56 $\pm$ 4.05	
Education		
Senior high school or below		83 (45.3)
Junior college		55 (30.1)
Bachelor's degree or above		45 (24.6)
Current employment status		
Full-time		107 (58.5)
Part-time or housewife		76 (41.5)
Monthly household income		
< NT\$50,000		63 (34.4)
$\geq$ NT\$50,000		120 (65.6)
Length of marriage (mo)	17.83 $\pm$ 18.60	
Pregnancy		
Planned		54 (29.5)
Unplanned		
No contraceptive used		92 (50.3)
Contraceptive used		37 (20.2)
Preferred sex of baby		
Boy or girl		48 (26.2)
Did not matter		135 (73.8)
Sex of baby		
Boy		83 (45.4)
Girl		100 (54.6)
Baby's body weight (kg)	3.15 $\pm$ 0.35	
Method of feeding baby		
Breast or formula		94 (51.4)
Mixed		89 (48.6)
Residence during postpartum period		
Own home (without parents or parents-in-law)		34 (18.6)
Parents-in-law-associated places		72 (39.4)
Parents-associated places		62 (33.8)
Others		15 (8.1)

expressed no preference about infant gender; 54.6% of the newborns were girls and the mean birth weight was  $3.15 \pm 0.35$  kg. Almost half (48.1%) of the women fed their babies by breast and 3.3% by formula, which totaled 51.4%. The places of residence during the postpartum period after discharge from hospital were: woman's own home (without parents or parents-in-law, 18.6%); woman's own home (with parents-in-law, 30.1%); her parents-in-law's home (9.3%); woman's own home (with parents, 8.7%); home of her parents (25.1%); postpartum care (Tso-Yueh-Tzu center (6.0%); relative's home (0.5%); two of the above places (i.e. shifted between two, 1.6%).

There was a disparity in the women's distributions among the places of residence during the postpartum period. Therefore, the places of postpartum women's residence were divided into four categories: (1) own home (without parents or parents-in-law); (2) parents-in-law-associated places; (3) parents-associated places; (4) others. The numbers of women in each category are shown in Table 1.

### **Ranking of postpartum stressors**

On the Hung PSS, there were 31 items with mean scores of 2.0 or higher, indicating that these first-time mothers perceived these items to be "seldom" to

**Table 2.** Mean scores and ranking for postpartum stressors ( $n = 183$ )

	Mean $\pm$ SD	Ranking
1. Interrupted sleep	2.85 $\pm$ 1.23	4
14. The unpredictability of the baby's schedule	2.92 $\pm$ 1.20	3
18. The baby getting sick suddenly	2.98 $\pm$ 1.14	1
30. The flabby flesh of my belly	2.95 $\pm$ 1.23	2
31. My life is restricted	2.55 $\pm$ 1.19	9
33. The baby choking during feeding	2.48 $\pm$ 1.13	10
41. The baby's crying	2.61 $\pm$ 1.04	8
42. The shape of the baby's head due to the sleeping position	2.75 $\pm$ 1.12	5
47. Not sleeping enough	2.74 $\pm$ 1.19	6
49. Lack of information regarding infant's growth and development	2.64 $\pm$ 1.13	7

"frequently" stressful. The top ten postpartum stressors perceived by the women were: "the baby getting sick suddenly", "the flabby flesh of my belly", "the unpredictability of the baby's schedule", "interrupted sleep", "the shape of the baby's head due to the sleeping position", "not sleeping enough", "lack of information regarding infant's growth and development", "the baby's crying", "my life is restricted", and "the baby choking during feeding" (Table 2).

### ***Relationships of first-time mothers' demographic characteristics to postpartum stress and its three components***

The relationships of first-time mother's postpartum stress, concerns about negative body changes, maternal role attainment, and lack of social support to her age were not statistically significant ( $r = -0.05$ ,  $p = 0.50$ ;  $r = -0.04$ ,  $p = 0.58$ ;  $r = -0.03$ ,  $p = 0.70$ ;  $r = -0.07$ ,  $p = 0.37$ ). Similarly, the relationships of first-time mother's postpartum stressors, concerns about negative body changes, maternal role attainment, and lack of social support, respectively, to the length of marriage and baby's body weight were not significant ( $r = -0.07$ ,  $p = 0.32$ ;  $r = -0.05$ ,  $p = 0.52$ ;  $r = -0.05$ ,  $p = 0.51$ ;  $r = -0.12$ ,  $p = 0.10$  and  $r = -0.01$ ,  $p = 0.86$ ;  $r = -0.00$ ,  $p = 1.00$ ;  $r = -0.02$ ,  $p = 0.80$ ;  $r = -0.03$ ,  $p = 0.69$ ).

### ***Mean scores of postpartum stress and its three components among first-time mothers' demographic characteristics***

Differences in the mean scores for first-time mothers' concerns about negative body changes, maternal role attainment, lack of social support, and postpartum stress among the women's demographic characteristics were determined by multivariate analysis of variance, one-way analysis of variance, and Scheffe's

*post hoc* test. The results showed that the mean scores for mothers' concerns about negative body changes, maternal role attainment, and lack of social support, and postpartum stress, respectively, did not differ significantly for the women's education level, current employment status, household income per month, whether the pregnancy was planned, preferred sex of the baby, sex of the baby, method of feeding the baby, and places of residence during the postpartum period (Table 3). Although the multivariate tests indicated an overall significant effect across concerns about negative body changes, maternal role attainment, and lack of social support for the places of residence during the postpartum period (Wilks'  $\lambda = 0.94$ ;  $p < 0.05$ ), neither of the univariate tests was significant ( $F = 1.13$ ,  $1.05$ ,  $0.76$ ;  $p > 0.05$ ).

## **DISCUSSION**

This study aimed to investigate postpartum stress from the perspective of the primipara. One hundred and eighty-three first-time mothers' postpartum stress and its correlates were examined following discharge from the hospital or clinic after vaginal delivery. The top ten postpartum stressors perceived by the women were: "the baby getting sick suddenly", "the flabby flesh of my belly", "the unpredictability of the baby's schedule", "interrupted sleep", "the shape of the baby's head due to the sleeping position", "not sleeping enough", "lack of information regarding infant's growth and development", "the baby's crying", "my life is restricted", and "the baby choking during feeding". Among these items, a woman's concerns about "the baby getting sick suddenly", "the unpredictability of the baby's schedule", "the shape of the baby's

**Table 3.** Mean scores of postpartum stress and its three components among first-time mothers' demographic characteristics ( $n=183$ )\*

	Negative body changes	Maternal role attainment	Lack of social support	Postpartum stress
Education				
Senior high school or below	64.07 ± 18.44	28.17 ± 8.43	31.02 ± 9.84	123.27 ± 33.70
Junior college	61.85 ± 17.26	27.69 ± 7.15	28.73 ± 7.41	118.27 ± 27.35
Bachelor's degree or above	64.22 ± 19.87	29.84 ± 8.92	28.56 ± 7.37	122.62 ± 32.58
Wilks' lambda			0.94	
F			2.01	0.44
p			0.06	0.64
Current employment status				
Full-time	63.23 ± 17.81	28.00 ± 7.99	29.23 ± 8.23	120.47 ± 30.72
Part-time or housewife	63.74 ± 19.29	29.05 ± 8.48	30.42 ± 9.17	123.21 ± 32.81
Wilks' lambda			0.99	
F			0.56	0.34
p			0.64	0.56
Monthly household income				
< NT\$50,000	65.21 ± 18.65	27.98 ± 7.64	30.65 ± 7.83	123.84 ± 29.96
≥ NT\$50,000	62.52 ± 18.26	28.68 ± 8.49	29.24 ± 9.02	120.43 ± 32.40
Wilks' lambda			0.98	
F			1.47	0.48
p			0.23	0.49
Pregnancy				
Planned	62.35 ± 16.50	27.07 ± 7.68	28.02 ± 7.51	117.44 ± 29.03
Unplanned				
No contraceptive used	61.92 ± 19.35	28.30 ± 8.25	30.29 ± 9.25	120.52 ± 33.13
Contraceptive used	68.81 ± 18.03	30.76 ± 8.50	30.81 ± 8.43	130.38 ± 30.11
Wilks' lambda			0.94	
F			2.03	1.98
p			0.06	0.14
Preferred sex of baby				
Boy or girl	65.19 ± 18.08	29.44 ± 8.71	31.50 ± 10.02	126.13 ± 33.44
Did not matter	62.82 ± 18.52	28.08 ± 8.00	29.10 ± 8.03	120.00 ± 30.81
Wilks' lambda			0.98	
F			1.05	1.34
p			0.37	0.25
Sex of baby				
Boy	66.22 ± 18.39	29.14 ± 8.64	29.80 ± 7.46	125.16 ± 30.60
Girl	61.14 ± 18.16	27.85 ± 7.79	29.67 ± 9.53	118.66 ± 32.16
Wilks' lambda			0.96	
F			2.39	1.93
p			0.07	0.17
Method of feeding baby				
Breast or formula	64.19 ± 19.98	28.16 ± 9.27	29.78 ± 8.90	122.13 ± 34.61
Mixed	62.65 ± 16.62	28.73 ± 6.92	29.67 ± 8.38	121.06 ± 28.13
Wilks' lambda			0.99	
F			0.50	0.05
p			0.68	0.82
Place of residence during postpartum period				
Own home	61.68 ± 16.65	28.38 ± 7.30	28.62 ± 7.04	118.68 ± 26.64
Parents-in-law-associated places	62.13 ± 18.17	27.68 ± 7.76	29.43 ± 8.36	119.24 ± 30.42
Parents-associated places	64.08 ± 19.97	29.81 ± 9.49	30.98 ± 10.26	124.87 ± 37.00
Others	71.13 ± 15.77	26.53 ± 5.83	28.47 ± 5.11	126.13 ± 22.02
Wilks' lambda			0.91	
F			1.95	0.55
p			0.04	0.65

\*Data are presented as mean ± standard deviation.



head due to the sleeping position", "lack of information regarding infant's growth and development", "the baby's crying", and "the baby choking during feeding" could reflect her lack of confidence in mothering behaviors. These mothers were inexperienced primiparous women, and once at home with the responsibility for infant care, their self-confidence may be challenged. Portrayal of the woman's comfort with self in maternal role attainment needs practice and time, because becoming a mother is a process of learned behavior.

During the early weeks of motherhood, first-time mothers may feel that no one has prepared them for the unrelenting demands of infant care [13]. They face challenges as they come to terms with their new role. Davis et al investigated the teaching priorities of mothers during the early postpartum period, and the infant care topic of highest priority was "infant illnesses" [14]. Bull identified that early maternal concerns focused on the nature and type of infant demands [15]. Smith found that in the early postpartum weeks, first-time mothers' concerns mostly revolved around learning to care for and meet the needs of a dependent baby [16]. In Taiwan, a person's face in terms of physiognomy is critical to their fortune. Women in the early postpartum period paid a lot of attention to fix their infants' sleeping positions in order to keep their infants' head in a correct shape [2]. The mothers required appropriate information and advice about babies and practice with baby care. Smith summarized the concerns of primiparas in her study as being related to inability to control infant behavior such as crying and infant feeding [16].

The items "the flabby flesh of my belly", "interrupted sleep", "not sleeping enough", and "my life is restricted" were considered by the women to be the most intense concerns related to negative body changes. These postpartum stressors are congruent with Lemmer's findings for primipara [17]. Fitness is the focus of today's society, with a sense of youth, slimness, and beauty being paramount for women (of all ages). Healthcare providers may wish to develop interventions that foster healthy lifestyle behaviors. Nurses should be prepared to assist new mothers in diet instruction and progressive exercises, particularly exercises that strengthen the abdominal and pelvic muscles.

Unpredictability of the day-to-day schedule and getting up with the baby at night were found to be

concerns in these mothers also. Frequent awakenings not only reduce total sleep time but also decrease sleep quality. The literature supports the importance of sleep to health and wellbeing and the adverse physiologic, psychologic, and behavioral consequences of the lack of sleep. Lack of sleep has a very tangible effect in terms of fatigue. Fatigue is a common complaint among postpartum women and has the potential to affect the quality of the early postpartum experience [4,13,16]. Nursing interventions are especially important for women who are concerned about the quality and quantity of their sleep experience after childbirth. Working with mothers to help them set priorities for activities so that they can make time for naps may help to prevent them from feeling exhausted.

Parenting demands a major reorganization of roles, relationships, and lifestyle patterns. Immediate postpartum concerns have also included difficulties in organizing or reorganizing one's life around a small infant as well as the need to have a predictable and manageable routine [16]. There is a concern that women who engage in mothering are cut off from society at large and lack the freedom "to do whatever, whenever, wherever" they want/please—personal space and time are sacrificed to the dictates of the altered lifestyle and relationships that are required to accommodate the new family member; the mothers in this study expressed this in the phrase, "my life is restricted".

There were no significant differences of postpartum stress and its three components among the first-time mothers' demographic characteristics. This indicates that the women's demographic characteristics were not influential in postpartum stress and negative body changes, maternal role attainment, and lack of social support. However, it is important to note that this study population consisted of a subset of low-risk childbearing women of limited diversity. It was a homogeneous sample of low-risk and first-time mothers who had normal pregnancies and vaginal deliveries, and delivered healthy, single, and full-term babies.

Further research is warranted to determine the effects of women's demographic characteristics on postpartum stress from the perspective of heterogeneous mothers. This study should be considered as an initial exploration of the postpartum stressors and stresses of new mothers, contributing to a body of knowledge regarding primiparous motherhood and the early postpartum period.

## CONCLUSION

The postpartum stressors found in this study may not result in rehospitalization. However, the unmeasured cost for families and society are not yet known. Although today's healthcare professionals or services are not suitably appropriate personnel or places to offer long-term professional support postpartum, identifying and meeting the needs of new mothers in the early postpartum period is an ongoing challenge for nursing. Nurses can use this research to gain valuable insight into the postpartum stressors perceived by new mothers in the early postpartum period. It is hoped that clinical strategies will be developed that can better meet the complex needs of new mothers.

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# 產後壓力及其相關因素之探討

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本研究目的在於探討初產婦於出院後之產後壓力及其相關因素。在高雄市的醫院和診所招募陰道分娩 183 位正常懷孕和分娩，並娩下一位健康足月兒的初產婦，在她們出院之後的產褥期間以洪氏產後壓力量表進行資料收集，以探討初產婦在產褥期間之產後壓力和其產後壓力源。研究結果顯示，「嬰兒突然生病」、「腹部肌肉鬆弛」、「嬰兒的生活作息無法預期」、「夜裡睡眠中斷」、「嬰兒的睡姿會影響頭形」、「睡眠不足」、「缺乏嬰兒生長發育的知識」、「嬰兒哭鬧不休」、「生活不自由」、「餵奶時嬰兒噎到」為初產婦最高的前十項產後壓力源。而初產婦的人口學資料與其產後壓力和三項產後壓力因素並沒有呈現統計上之相關。本研究有關初產婦的產後壓力與產後壓力源之研究結果可提供健康照護專業人員參考，尤其在發展相關課程和資源時，更應重視初產婦的獨特需求。

**關鍵詞：**初產婦，缺乏社會支持，母育角色獲得，負向身體改變，產後壓力

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